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EXAMINER

PALABRICA, RICARDO J

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/584,165  
Filing Date: June 22, 2006  
Appellant(s): LABARRIERE ET AL.

June 16, 2009

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William Gehris  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 3/19/09 appealing from the Office action mailed 8/13/08.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 16 to 18, 22 to 25, and 28.

Claims 19 to 21, 26, 27, 29 and 30 are withdrawn from consideration as not directed to the elected invention (see 12/06/07 Response to Restriction Requirement, Remarks Section, page 5).

Claims 1-15 have been canceled.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. The examiner notes that appellant argues independent claim 24 separately,

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whereas this claim is part of the group of claims (i.e., 16, 17, 22-25, and 28) that was rejected by a single ground of rejection. However, the arguments presented for claim 24 are essentially the same as those presented for the rejected group.

### **(7) Claims Appendix**

A substantially correct copy of appealed claims 16 to 18, 22 to 25, and 28 appears on pages 9-12 of the Appendix to the appellant's brief. The minor errors are as follows: withdrawn claims 19 to 21, 26, 27, 29 and 30 have been included, a status identifier is provided for each appended claim, and the status of claim 29 should read, "withdrawn" instead of "previously presented."

The examiner notes that appellant is not providing any arguments regarding the withdrawn claims.

### **(8) Evidence Relied Upon**

5,490,191	CHRISTIANSEN ET AL.	2-1996
5,384,814	MATZNER ET AL.	1-1995

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9.1 Claims 16, 17, 22-25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Christiansen et al. (U.S. 5,490,191) who disclose a terminal end piece and a fuel assembly for a nuclear reactor.

The claims are directed to an apparatus and NOT to a process.

Claim 16 recites only two structural limitations associated with the terminal end-piece: a) a maintenance arrangement; and b) said end-piece being a two-piece component. The other statements in the claim, e.g., “for a fuel assembly of a nuclear reactor, ...” (in the preamble), “for laterally maintaining adjacent longitudinal ends ...” (in the body), “for longitudinally clamping the adjacent longitudinal ends ...” (in the body), etc. are essentially method limitations or statements of intended or desired use. These clauses, as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference, as long as the structure of the cited references is capable of performing the intended use. See MPEP 2111-2115.

See also MPEP 2114 that states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

[A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525,1528.

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Claim 24 is likewise replete with statements of intended or desired use.

The apparatus in the reference cited below is capable of being used in the same manner and for the intended or desired use as the claimed invention. Note that it is sufficient to show that said capability exists, which is the case for the cited reference.

As to claims 16 and 24, Christiansen et al. disclose a fuel assembly (e.g., Fig. 1) comprising: a) fuel rods 12; b) a skeleton for supporting the fuel rods comprising two terminal end pieces (i.e., top end piece 16 and bottom end piece 14) and elements for connecting the end pieces (i.e., tie rods 20).

Applicant's claim language, "end piece comprising two components" reads on the combination of lower tie plate 54 and spring element 55, in Christiansen et al.'s embodiment of the lower tie plate as shown in Fig. 5 (see also col. 4, lines 38+).

As to the claim limitation,

*"an arrangement for laterally maintaining adjacent longitudinal ends of substantially all the fuel rods, the arrangement configured at nodes of the substantially regular network, wherein the maintenance arrangement constitutes an arrangement for longitudinally securing the adjacent longitudinal ends of the fuel rods relative to the terminal end-piece..."*

the examiner notes that:

- a) no physical structure is recited for "arrangement";
- b) the conditions under which the functions of the "arrangement" have to be performed (e.g., reactor status, reactor power, etc.) are not specified;
- c) "arrangement" is not defined in the specification, and the term is therefore given its plain meaning, i.e., an assembly or a configuration or a pattern of parts or elements (see MPEP 2111.01); and
- d) "arrangement" provides for both laterally maintaining and longitudinal securing adjacent longitudinal ends of fuel rods.

Based on the above notes, appellant's claim language, "arrangement" reads on the arrangement or configuration of spring element 55 and bore 54h in the lower tie plate (see Fig. 5). Note that these spring elements are capable of: a) laterally maintaining adjacent longitudinal ends of substantially all the fuel rods 12; and b) longitudinally securing the adjacent longitudinal ends of the fuel rods relative to the terminal end piece.

Since the claims broadly recite as to when or how the longitudinal clamping/securing function is performed, providing this capability under any reactor status/condition, e.g., before operating the reactor (when no coolant flow could cause fuel rod movement) or at low reactor power levels (when temperatures of the fuel would not result in fuel expansion), are not precluded by the claims.

Note from Fig. 5 in Christiansen et al. that the inherent friction in spring 55 and the configuration of the bore 54h provide the capability to longitudinally secure/clamp the adjacent ends of fuel rods. If the spring did not provide friction and the bore did not have the proper dimension, a fuel rod would not be longitudinally secured when the reactor is assembled in preparation for eventual operation or at low power levels. The spring and the bore also laterally maintain adjacent longitudinal ends of fuel rods.

As to claims 17 and 25, appellant's claim language " housings " reads on the holes 54e wherein the ends 53 of the rods are disposed (see Fig. 5 and col. 4, lines 48+).

As to claim 22, appellant's claim language, "bottom end-piece" reads on lower tie plate 54.

As to claim 23, appellant's claim language, "feet" reads on the legs 54a, 54b of the lower tie plate 54.

As to claim 28, appellant's claim language "widened feet" reads on the sloping upper part of longitudinal end 53 that is wider than its lower part (e.g., see Fig. 5).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9.2 Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen et al. in view of Matzner et al. (U.S. 5,384,814). Christiansen et al. disclose the appellant's claim limitations except for an anti-debris filter.

Matzner et al. a plurality of anti-debris filter suitable for use in a fuel assembly such as Christiansen et al.'s (see, for example, Figs. 2-10).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, as disclosed by Christiansen et al., by the teaching of Matzner et al., to include an anti debris filter for the fuel assembly, to gain the advantages thereof (i.e., prevent fretting damage to the fuel rods), because such modification is no more than the use of a well-known expedient in the nuclear art.

### **(10) Response to Argument**



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10.1 Appellant argues that Christiansen et al. fail to show "two components longitudinal clamping" or "an arrangement for longitudinal securing" of fuel rods. To support his argument, appellant: a) cites col. 1, lines 28 to 33 in Christiansen et al. allegedly stating that "the fuel rods are free to move longitudinally"; and b) asserts that "[w]hen vibrations occur, the fuel rods in Christiansen can move vertically upwards and downwards which is not 'longitudinal securing' as claimed." The examiner disagrees.

As to argument a), the passage in Christiansen et al. cited by statement is as follows:

*"In order to accommodate the longitudinal (i.e., axial) expansion of the fuel rods during reactor operations the restraining holes in the lower tie plate which receive the fuel rod end caps are sized so the fuel rod end caps when positioned in their corresponding holes are free to move." Underlining provided.*

Clearly, the longitudinal movement of the rods referred to by Christiansen et al. occurs ONLY at elevated reactor power levels, when heat from power generated by the fuel rods can cause their longitudinal expansion. As stated earlier, appellant's claims do not specify that the conditions under which the so-called arrangement provides said clamping or securing. As discussed in section 9.1 above, the maintenance arrangement in Christiansen et al. provides the claimed clamping capability following assembly of the reactor and prior to operation, as well as under low power conditions.

Additionally, by citing the above statement in Christiansen et al., appellant is relying on a feature (i.e., operation at elevated power levels) that is not recited in rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Additionally, if said unrecited feature is

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considered by the applicant to be critical to his invention, then such omission would amount to a gap between the essential elements. In this case, the claim(s) would be incomplete and would be rejected under 35 U.S.C. 112, second paragraph. See MPEP § 2172.01.

The other citation in Christiansen et al. that appellant relies upon to support his argument, i.e. col. 4, lines 33 to 36, also pertains to the conditions associated with reactor operation. Again, this argument has no basis for the same reasons stated by the examiner above.

As to argument b), the vibrations that appellant alleges as causing potential longitudinal movement of fuel rods in Christiansen et al. would occur only during the operational phase of the reactor when coolant flows through the core. Such vibrations would not be present prior to operation when there is no coolant flow. Thus, appellant's argument has no basis for the same reasons stated by the examiner above.

10.2 Appellant traversed the rejection of claim 18 over Christiansen et al. in view of Matzner: a) for the same reasons as those cited in section 10.1 above; and b) "there is no reason or motivation for one of ordinary skill in the art to modify Christiansen in view of Matzner.

The examiner disagrees.

As to argument a), appellant's arguments have no basis, as shown in section 10.1 above.

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As to argument b), as stated in section 5 of the 8/13/08 Office action (which references section 4 of the 1/14/08 Office action, modifying Christiansen by the teaching of Matzner, to include an anti-debris filter for the fuel assembly would provide the advantage of preventing fretting damage to the fuel rods, and such modification would be no more than including a well-known expedient in the nuclear art.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Rick Palabrica/  
Primary Examiner  
Art Unit 3663

Conferees:

Jack Keith

/J. W. K./

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